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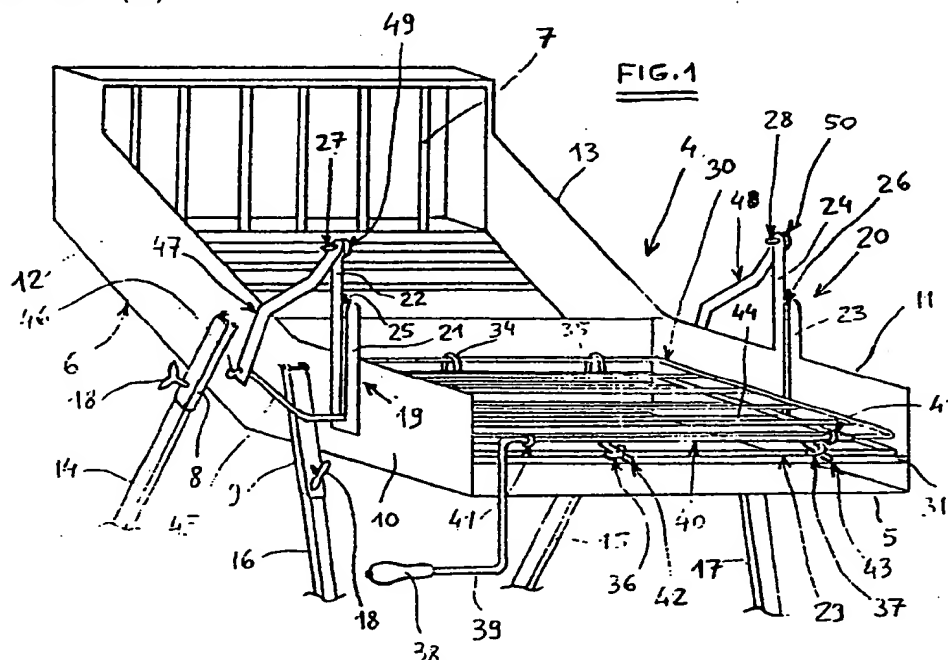
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54 Apparatus for grill-cooking of foods, particularly meats, fish and the like.

57 Apparatus comprising a box-like casing (4) open at its upper side, or a support framework (52) for two metallic grates (29,30) spaced between them, in which the foods to be cooked are enclosed. Cooking of the foods is performed in a conventional way on the glowing fire and the same foods may be also cooked on other surfaces thereof, by upsetting the two grates (29,30) by means of a handle (38) able to reciprocally connect the grates and acting on an articulated mechanism formed by connecting rod and crank, which is pivoted to the box-like casing (4) or the support framework (52).



## APPARATUS FOR GRILL-COOKING OF FOODS, PARTICULARLY MEATS, FISH AND THE LIKE

The invention relates to an apparatus for grill-cooking of goods, particularly meats, fish and the like, which is provided with a simple device for upsetting the goods adapted to permit the cooking thereof on both their main surfaces.

At the present time, it is known that apparatus for grill-cooking of foods such meats, fish etc. for fixed installations, such as for instance for fireplaces, or apparatus of portable kind as for instance for campings etc. are used, which are substantially constituted by a box-like casing which is open at its upper side and is adequately shaped, which casing is able to contain fuel substances (coal, wood, peat, etc.) as well as to collect the fat substances dripping from the foods being cooked, said casing being able to support at its upper part at least a metallic grate on which the foods to be cooked are disposed.

In particular, such grate normally is obtained with a rectangular form or also with different forms and generally is dimensioned with a surface sufficient to allow several foods to be cooked.

Besides, the grate referred to is provided with adequate differently shaped catch handles and may be laid, hooked or supported also in different ways on the apparatus box-like casing, so as to be disposed in a position overhanging the glowing fire obtained by lighting the fuel.

In this manner, the foods which are disposed on the grate may be cooked slowly at their surface submitted to the heat of such glowing fire.

In addition, such foods are upset on the grate from time to time, both for preventing their surfaces submitted to heat from being burned and for permitting also the remaining surfaces thereof to be cooked.

To this aim, generally upsetting of the foods is effected manually, by keeping the grate in position and utilizing appropriate forks and other suitable tools, and by watching firmly the cooking state of the same foods.

Likewise, the upsetting may also be effected by keeping the foods in position on the grate in different ways, i.e. by means of a further grate fitted over the previous one so as the goods are interposed between the two grates, then by grasping such grates at their associated handles, raising them with respect to the box-like casing, upsetting and lowering them again on the box-like casing, so that the foods may be also cooked at their other surfaces.

However, both these manners for upsetting the foods give rise to inconveniences and also are less practical.

In fact, in the first case first of all it is needed

to act rapidly on the foods near the glowing fire, in order to avoid the risk of burns for the user.

Moreover, rather frequently it may happen that in case in which the cooking state of the foods hasn't been carefully watched, the foods result to be more or less burnt and/or stuck to the grate, with consequent difficult detaching thereof from such grate for the requested upsetting thereof effected by the operator and sometimes even with loss of their natural flavour.

On the contrary, in the second case such operation of upsetting the grates together with the foods is difficult and also requires a certain practice for performing it correctly and at the right time without dangers for the user.

The invention intends to overcome the above described inconveniences, by means of an apparatus of simple kind for grill-cooking of foods, which permits to effect upsetting thereof in manners different than those previously described, by acting directly on the same apparatus. These and other scopes are obtained, according to the invention, by means of an apparatus for grill-cooking of foods, particularly meats, fish and the like comprising at least a metallic grate adapted to support the foods to be cooked and to permit a respective surface of the same foods to be cooked in a conventional way, said grate being adaptable into a correspondent box-like casing open at its upper side, said casing being so shaped as to contain the fuel substances for cooking foods and for the eventual collection of the fat substances dripping from the foods being cooked, said grate being adaptable alternatively on an independent support framework.

The apparatus referred to is characterized in that said grate is removably supported on said box-like casing or said support framework by support means and besides in that at least a further metallic grate is provided, and is adaptable to and cooperating with said grate in such a manner that the foods to be cooked are enclosed between said grate and said further grate, the latter being provided with at least a handle adapted to engage and disengage said grate, respectively permitting the reciprocal connection and disconnection of both grates, upsetting means being also provided for permitting upsetting of both grates, together with the foods enclosed therebetween, at the position of the reciprocal connection thereof.

The invention will be better understood from the following description thereof, by way of a non-limitative example only and with reference to the following drawings in which:

-fig. 1 shows a perspective view of a first embodiment of the apparatus according to the in-

vention, actuated in an operative position thereof in which the foods are cooked at a single surface thereof only;

- fig. 2 shows a perspective view of an item of the apparatus of fig.1, in a position thereof in which the foods are being upset;

- fig. 3 shows a perspective view of an item of the apparatus of fig.1, in an operative position thereof in which the foods are completely upset and cooked at the other surface thereof;

- fig. 4 a perspective view of another embodiment of the apparatus according to the invention, actuated in an operative position thereof in which the foods are cooked at a single surface thereof only;

- fig. 5 shows a perspective view of an item of the apparatus of fig.4, in a position thereof in which the foods are being upset;

- fig. 6 shows a perspective view of an item of the apparatus of fig.1, in an operative position thereof in which the foods are completely upset and cooked at the other surface thereof.

With reference to the fig. 1, it is shown an apparatus for grill-cooking of foods, according to the invention, in particular meats, fish and the like, obtained according to a first possible embodiment thereof.

Such an apparatus substantially comprises a metallic box-like casing 4 open at its upper side and constituting a barbecue, adapted to be installed on fixed positions or for portable use thereof.

In particular, such box-like casing is so bent as to form a flat box-like portion 5 and an inclined box-like portion 6, which are connected together, from which the flat portion 5 is open at its front side and is adapted to collect the glowing fire required for cooking the foods, which glowing fire is produced by the combustion of the fuel substances commonly used for this kind of cooking as i.e. coal, woods, peat etc., which substances to this purpose are introduced into a proper metallic grate 7 provided above the inclined box-like portion 6 and are lighted therein.

In addition, such flat portion 5 is adapted to collect the fat substances dripping from the foods being cooked.

Besides, the so obtained box-like casing is normally provided with two pairs of identic housings 8,9 (in the figure 1 it is shown a single pair of housings), which are fixed outside against the associated side surfaces 10,11 and 12,13 of flat portion 5 and the inclined portion 6 of the same casing.

In particular, the housings 8,9 of each pair are disposed at a reciprocally inclined position, divergent towards the bottom of the box-like casing 4, in such a way as to permit respective metallic legs 14,15,16,17 of adequate length to be inserted into

the same housings, which legs are able to provide the support of the apparatus referred to on the ground.

Moreover, such legs may be stopped in a position in which they are inserted into the described housings, by means of proper screw clamps 18 or similar devices which are tighten to said legs, and may be extracted from the same housings again by unloosing the screw clamps 18.

In turn, the flat box-like portion 5 is provided with two rectilinear support forks 19 and 20 equal each other, vertically fitted at reciprocally corresponding positions to the associated side surfaces 10 and 11 of the same portion.

In particular, the forks 19 and 20 are constituted by respective elements 21,22 and 23,24 which are parallel and slightly spaced between them, in such a way as to determine a correspondent vertical slot 25 and 26. The pairs of elements 21 and 23, also, have the same length of and are shorter than the remaining pair of elements 22 and 24, also having reciprocally the same length.

Finally, each of the longer elements 22 and 24 of the above forks is provided at its free end with a suitable articulation stud, respectively 27 and 28, whose function will be described hereinafter, each stud being constituted i.e. by a bolt or the like which is welded or fixed in another suitable way to the associated element of the fork and also is turned outwards with respect to the box-like casing 4. In addition, the considered box-like casing is provided with at least two conventional metallic grates 29 and 30, preferably of rectangular shape and adapted to support the foods to be cooked as well as dimensioned in such a manner as to be adapted perfectly on the the flat box-like portion 5 and to be supported horizontally thereon, by means of a metallic bar 31 connected at the front side of said flat portion, between the side surfaces 10,11 thereof, and of two metallic supports 32 and 33 connected to such side surfaces, at the back side thereof. The grates 29 and 30 are reciprocally hinged connected, along the longitudinal back edge thereof, either by means of metallic slots 34 and 35 connected to the grate 29, or by means of hinges or the like, so as to be able to be reciprocally moved away or superimposed, at the required distance, at the level of their front longitudinal edge, thus permitting the foods to be introduced into or extracted from the same grates.

In particular, in the fig. 1 it is noted that the grate 29 is disposed below the grate 30 and is resting directly on the above described strip 31 and supports 32 and 33; it is also provided with metallic eyelets 36 and 37 or the like, which are fitted along the front longitudinal edge of the same grate for permitting the other grate 30 to be connected thereto in the manner hereinafter described.

In turn, the grate 30 is provided with at least a handle 38 made of suitable insulating material (for instance wood) and is able to provide for shifting the same grate, said handle being connected to a two-folded metallic wire 39 provided with an extended rectilinear portion 40, which can be introduced into corresponding metallic eyelets 41 fixed along the front longitudinal edge of the same grate.

In addition, parts of short metallic wires 42 and 43, inclined with respect to the extended portion 40 are welded or connected in other suitable ways thereto, in such positions as to permit a limited longitudinal sliding of the extended portion 40 through the associated eyelets 41, however without permitting the same portion to be extracted therefrom and furthermore allowing the reciprocal engagement of said parts of wires 42 and 43 to the associated eyelets 36 and 37 of the other grate 29, when both the grates 29 and 30 are superimposed between them.

By examining the grate 29 again, it is noted that the one of the longitudinal metallic wires forming thereof is longer than the other metallic wires of said grate.

In particular, such metallic wire 44 is provided at the central position of the shorter sides of the grate 29 and projects with a rectilinear part from both such sides (in the fig. 1 it is shown the rectilinear part 45 only), which part is inserted through the associated vertical slots 25 and 26 of the above described fork elements 19 and 20. In turn, each of such rectilinear parts is two-folded orthogonally along the same plane and at its free end forms a stud 46 on which the end of an associated rigid metallic arm 47,48 is articulated, whose other end in turn is articulated on the associated stud 27,28 of the fork elements 19 and 20.

Further, in the present case since each stud 27,28 is formed by a threaded bolt, as previously described, it follows that any extraction of each arm from the associated bolt is prevented by using a suitable catch device, formed for instance by an associated wing nut 49,50, which is screwed on the corresponding bolt and tightened against the associated arm.

Such arms, which are identical between them, are each two-folded with adequate slants outwards the box-like casing 4, in order that the two ends of each arm could be correctly articulated on the associated studs, which in turn are disposed on two different vertical planes. In this way, it is obtained a mechanism for actuating the grates 29 and 30 which is constituted by two pairs of connecting rods (arms 47 and 48) and of cranks (rectilinear parts 45), which mechanism is able to determined rapidly and easily the upsetting of the same grates, together with the foods enclosed therebetween, in the manner hereinafter described.

To this aim, the introduction of the foods between the grates 29 and 30 is effected by firstly putting the grate 29 on the box-like casing 4, as previously described, and then by lifting the grate 30 from the grate 29 while rotating it about the hinging zone of the same grates, so that the foods can thus be laid and disposed at will on the underlying grate 29.

Thereafter, the grate 30 is lowered and superimposed on the grate 29, thus enclosing the foods between these two grates, and the handle 38 is slightly displaced in the longitudinal direction, so as the parts of metallic wires 42 and 43 of the grate 30 engage the corresponding eyelets 36 and 37 of the grate 29.

In this position, evident in fig. 1, then the cooking of the foods may be carried out on a surface thereof, while the handle because of being engaged to both the grates 29 and 30 is able to determine the shifting and upsetting of the same grates and of the foods enclosed therebetween.

In the fig. 2, in particular, there are shown the two grates 29 and 30 during the upsetting step, in which the handle 38 is actuated in the direction indicated by the arrow A, thus obtaining the contemporaneous raising of both grates.

In such case, this displacement of both grates 29 and 30 causes also a limited shifting upwards of the rectilinear parts 45 of the wire 44 of the grate 29, along the associated vertical slots 25 and 26 of the fork elements 19 and 20.

Likewise, the consequent raising of the studs 46 of such rectilinear parts 45 causes also a limited oscillation of the arms 47,48 around the associated studs 27,28, in the direction B which is opposite to the displacement direction A of the grates 29 and 30 and of the handle 38.

In the figure it is further noted that each of the arms 47,48 is almost superimposed on the corresponding rectilinear part 45 of the wire 44.

By pursuing the displacement of the handle 38 and of the grates 29 and 30 in the direction A, then, the studs 46 are lowered together with the rectilinear parts 45 slidable along the associated vertical slots 25 and 26 of the fork elements 19 and 20, as long as at the end of this upsetting operation such studs and rectilinear parts are fully lowered.

In this position evident in the fig. 3, then, the grates 29 and 30 and the foods enclosed therebetween are upset at 180°, while the handle 38 and the arms 47,48 are shifted in a position which is opposite than the preceding position of fig. 1.

Consequently, in this upset position the foods may be cooked also on other surfaces thereof, without need of upsetting the same in a conventional way.

Then, operating steps in an inverse sense to that described are performed for extracting the

foods from the grates 29 and 30.

Now examining the fig. 4, 5 and 6, it is shown the present apparatus according to a further embodiment thereof, where it is actuated in three different operative positions in which it is respectively predisposed for cooking a surface of the foods, is under upsetting step and is fully upset so as to allow the foods to be cooked also on the other surface thereof.

In this case, the cooking apparatus is substantially constituted by the same two previously described grates 29, 30, which may engage and disengage reciprocally by means of the handle 38, connected to a rectilinear metallic wire 51 of extended form, in which the parts of metallic wire 42 and 43 of short length are fixed, which parts are inclined with respect to the same wire for permitting them to engage and disengage reciprocally the corresponding eyelets 36 and 27 of the grate 29 in the same manner as described.

Moreover, such grates are supported and adaptable on a metallic and independent support framework 52, preferably of rectangular shape, which is adequately provided with a set of vertical rigid legs 53 connected to the same framework in a rigid or articulated way and able to permit the apparatus to be laid on the ground.

In order to support both grates 29, 30 on the metallic framework 52, the one of such grates (in this case the grate 30) is provided with a longitudinal metallic wire 53 which is longer than the other wires of the grate and is fixed centrally to the shorter sides of the same grate, being also projected beyond such sides with an associated rectilinear part 54 thereof.

In turn, the support framework 52 is provided with an articulated mechanism at the level of each smaller side thereof, in which mechanism the grates 29, 30 are connected so that they can be upset contemporaneously as described later.

Such an articulated mechanism is formed by a rigid rod 55, which in the present case is shaped as a short metallic wire but it may be also shaped with different forms and sizes, said rod being rigidly connected at its middle part to the end of the associated rectilinear part 54 of the longitudinal wire 53 of the grate 30, as well as it is formed by two rigid metallic arms 56 and 57, pivoted at an associated end 58, 59 thereof to the support framework 52, at the one and the other side position thereof, which arms are articulated at the other end thereof to the associated opposite ends of the rigid rod 55.

In the considered figures, it is shown an articulated mechanism only of the kind referred to, which is fitted against the shorter side 60 of the support framework 52.

Thus, it is evident the operation of the so

obtained cooking apparatus. In fact, as it is clear from the fig. 4, as soon as the foods to be cooked have been introduced between the grates 29 and 30 and these have been hooked reciprocally through the metallic wire 51 actuable by the handle 38, the latter being shifted laterally with respect to the support framework 52 (in the present case rightwards), in which condition the rigid arms 56 and 57 are shifted as illustrated, it may be initiated the cooking of the foods surface being submitted to the flame.

To this aim, the apparatus may be advantageously of the portable kind, by resting the legs 53 of the support framework 52 on the ground and arranging the fuel materials below the grates 29 and 30, on a flat surface 60 provided beneath the support framework 52.

Furthermore, such apparatus may be also predisposed for being fitted to different apparatus, by adapting it adequately and keeping said articulated mechanism fitted against the support framework.

In order to upset both grates, so that the foods may be also cooked at their other surface, which operation is effected normally from time to time to ensure satisfactory and even cookings of the same foods, the handle 38 is raised with a circular movement in the direction of the arrow C, thus causing the contemporaneous raising of both grates 29 and 30.

In the fig. 5, in particular, it is noted that such grates are being upsetting, at the condition in which the arms 56 and 57 and the rod 55 are shifted upwards, at a position of greatest raising of said grates with respect to the support framework 52.

Afterwards, at the fully upset position of the grates, shown in the fig. 6, it is noted that they are upset with respect to the starting position of fig. 1, while the handle 38 is shifted in an opposite direction (leftwards) and the arms 56 and 57 are shifted in positions which are symmetrically opposite to those of fig. 1.

Therefore, the thus obtained apparatus permit to effect the upsetting of the foods in a simple way, by avoiding any hazard of burns for the user, which in such case will act exclusively on the handle 38 and does not need more to touch the hot grates.

In addition, these apparatus make it possible to obtain a satisfactory cooking of the foods, thanks to the fact that the same foods may be frequently upset without excessive difficulties.

Finally, also the inspection of the cooking state of the foods is made easier, thus preventing any burning or incrustation of the same foods on the grates.

Finally, according to the invention it is also possible to bring further modifications to the apparatus referred to, for instance by shaping the

grates or arranging the handle and the supports for the same grates in different manners than those described, thus without departing from the protection field of the same invention.

## Claims

1) Apparatus for grill-cooking of foods, in particular of meats, fishes and the like, comprising at least a metallic grate able to support the foods to be cooked and to permit the conventional cooking of a respective surface thereof, said grate being adaptable within a correspondent ox-like casing open at its upper side, said casing being so shaped as to contain the fuel materials for cooking the foods and for any collection of the fat substances being dripping from the same foods during cooking thereof, said grate being optionally adaptable within an independent support framework, characterized in that said grate (29) is removably supported on said box-like casing (4) or said support framework (52), by means of support means (31,32,33;53,54) and in that it is also provided at least an additional metallic grate (30), adaptable to and co-operating with said grate (29) in a manner that the foods to be cooked are enclosed between said grate (29) and said additional grate (30), the latter being provided with at least a handle (38) able to engage and disengage said grate (29), to permit respectively the reciprocal connection and disconnection of both grates (29,30), upsetting means (44,45,47,48;53,54,55,56,57) being also provided for permitting both said grates (29,30) to be upset, together with the foods enclosed therebetween, at the position of reciprocal connection thereof.

2) Apparatus according to claim 1, characterized in that said support means comprise at least a metallic strip (31), fixed frontally between the side surfaces (10,11) of said box-like casing (4) and two metallic supports (32,33) fixed backwards against said side surfaces (10,11).

3) Apparatus according to claim 1, characterized in that said support means comprise at least a longitudinal metallic wire (53') fixed centrally to the shorter sides of said additional grate (30) and projected beyond such sides with a relevant rectilinear part (54), supported by said support framework (52).

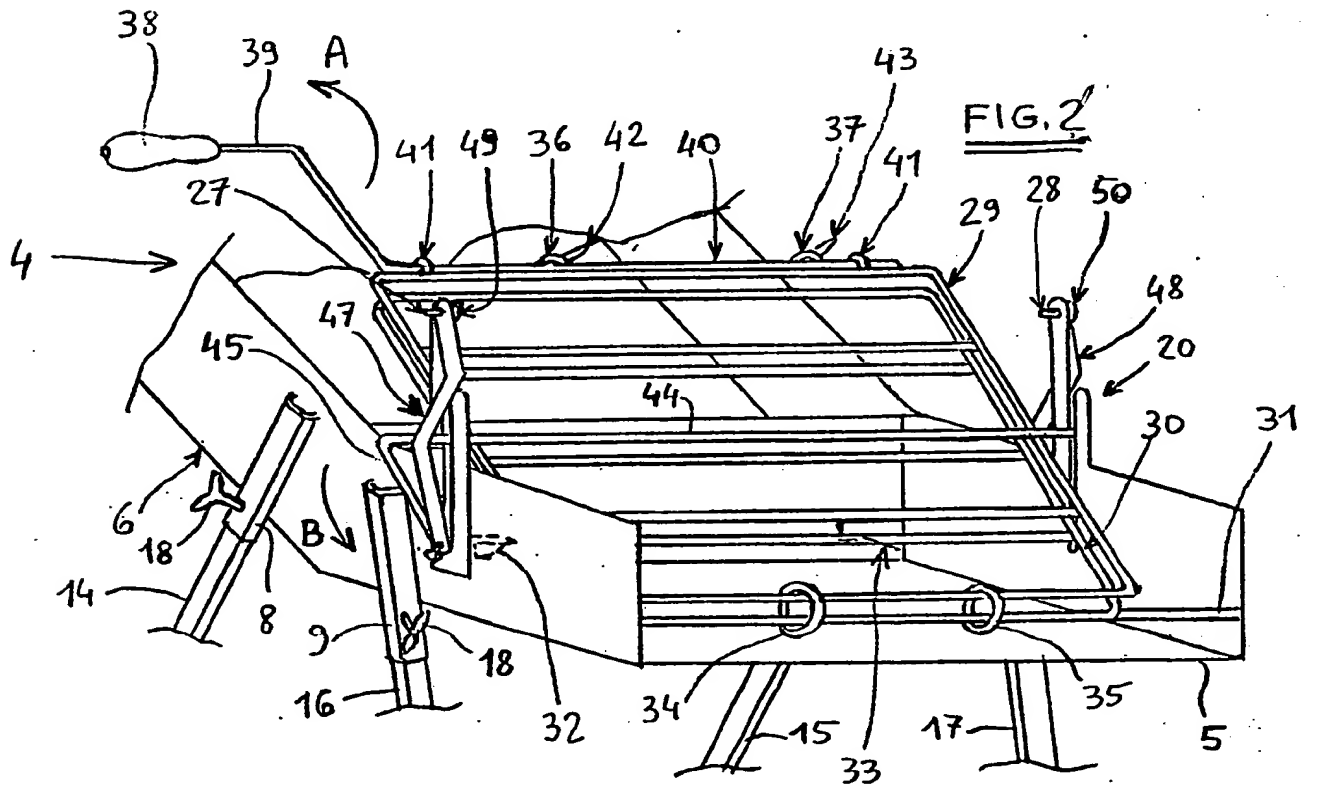
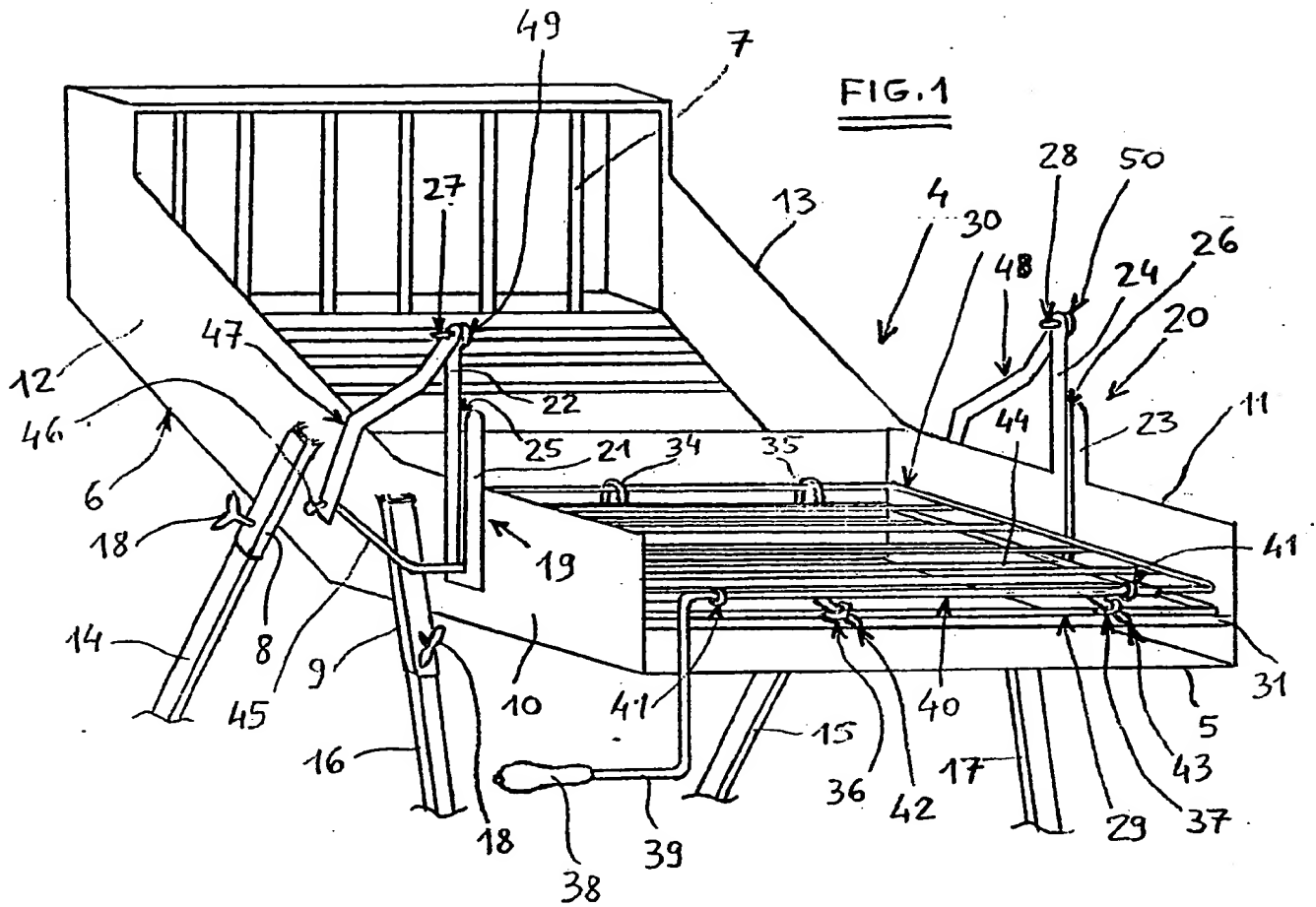
4) Apparatus according to claim 1, characterized in that said grate (29) and said additional grate (30) are reciprocally hinged preferably along their back longitudinal edge, by means of metallic slots (34,35) connected to said grate (29), or by means of hinges or the like, so that they may be reciprocally removed or superimposed at the proper distance, thus permitting the foods to be introduced

into and extracted from the same grates, and characterized in that said grate (29) is also provided along its front longitudinal edge with metallic eyelets (36,37) or the like.

5) Apparatus according to claim 4, characterized in that said handle (38) is connected to a metallic wire (39,51) provided with at least an extended rectilinear portion (40,51), insertable into corresponding metallic eyelets (41) fitted along the front longitudinal edge of said additional grate (30), said extended portion (40,51) being provided with parts of metallic wire (42,43) of short length, inclined with respect to the said extended portion (40,51) and able to reciprocally engage said metallic eyelets (36,37) of said grate (29) in the position in which said additional grate (30) is superimposed on said grate (29).

6) Apparatus according to claim 1, characterized in that said upsetting means comprise at least a metallic wire (44) provided centrally to the shorter sides of said grate (29) and projected from both such sides with a relevant rectilinear part (45), which may be introduced through associated vertical slots (25,26) of fork elements (19,20) fitted laterally against said box-like casing (4), each rectilinear part (45) being two-folded and provided with an associated stud (46), said upsetting means also comprising an associated rigid metallic arm (47,48) articulated at the one end thereof to each of said stud (46) and at the other end thereof to another associated stud (27,28), respectively provided on said fork elements (19,20).

7) Apparatus according to claim 3, characterized in that said upsetting means comprise said longitudinal metallic wire (53') and said rectilinear parts (54) as well as comprise an articulated mechanism at the level of the associated shorter sides of said support framework (52), said articulated mechanism being formed by a rigid rod (55) connected at its middle part to an associated rectilinear part (54), as well as by two rigid arms (56,57) pivoted at a respective end (58,59) thereof to said support framework (52), at the one and the other side position thereof, said arms (56,57) being articulated at their other end to the associated opposite ends of said rigid rod (55).



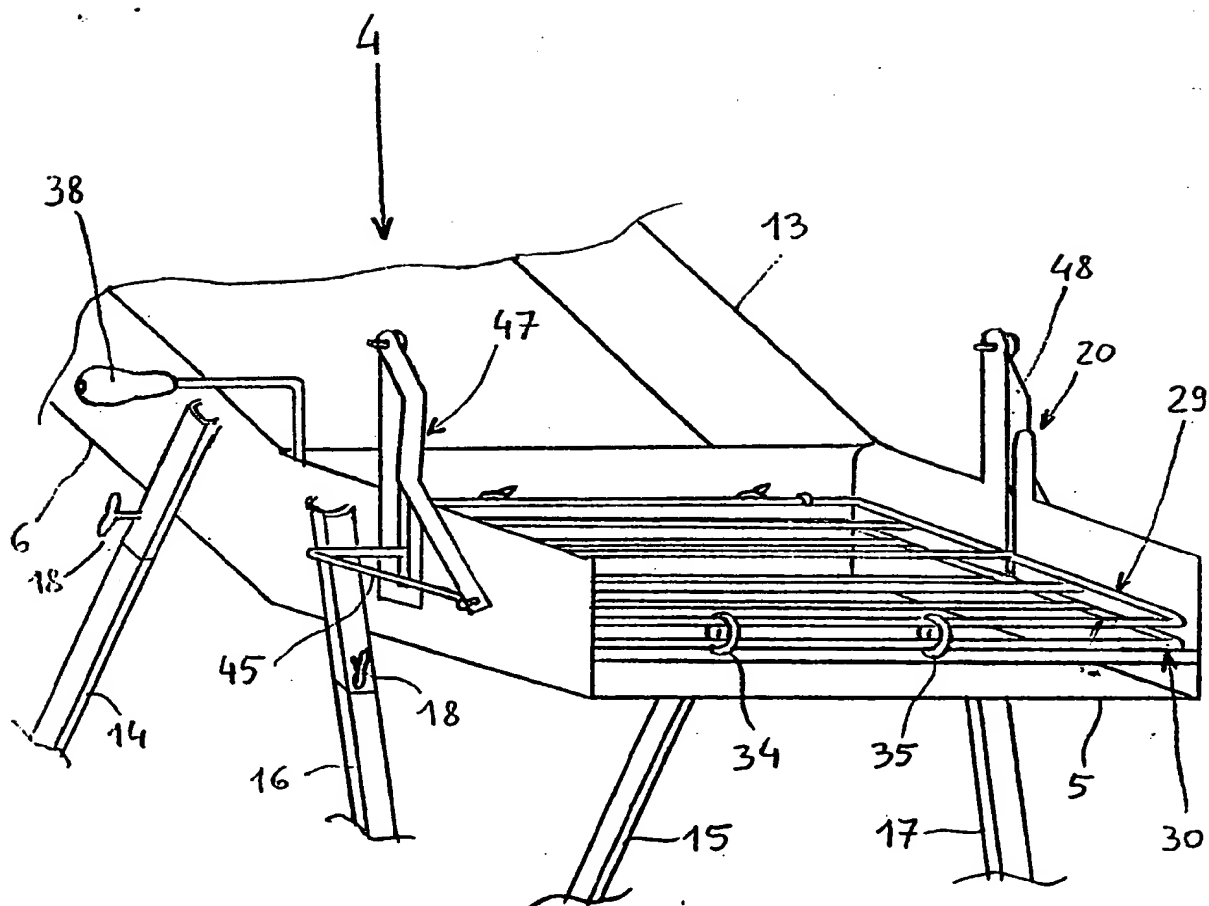
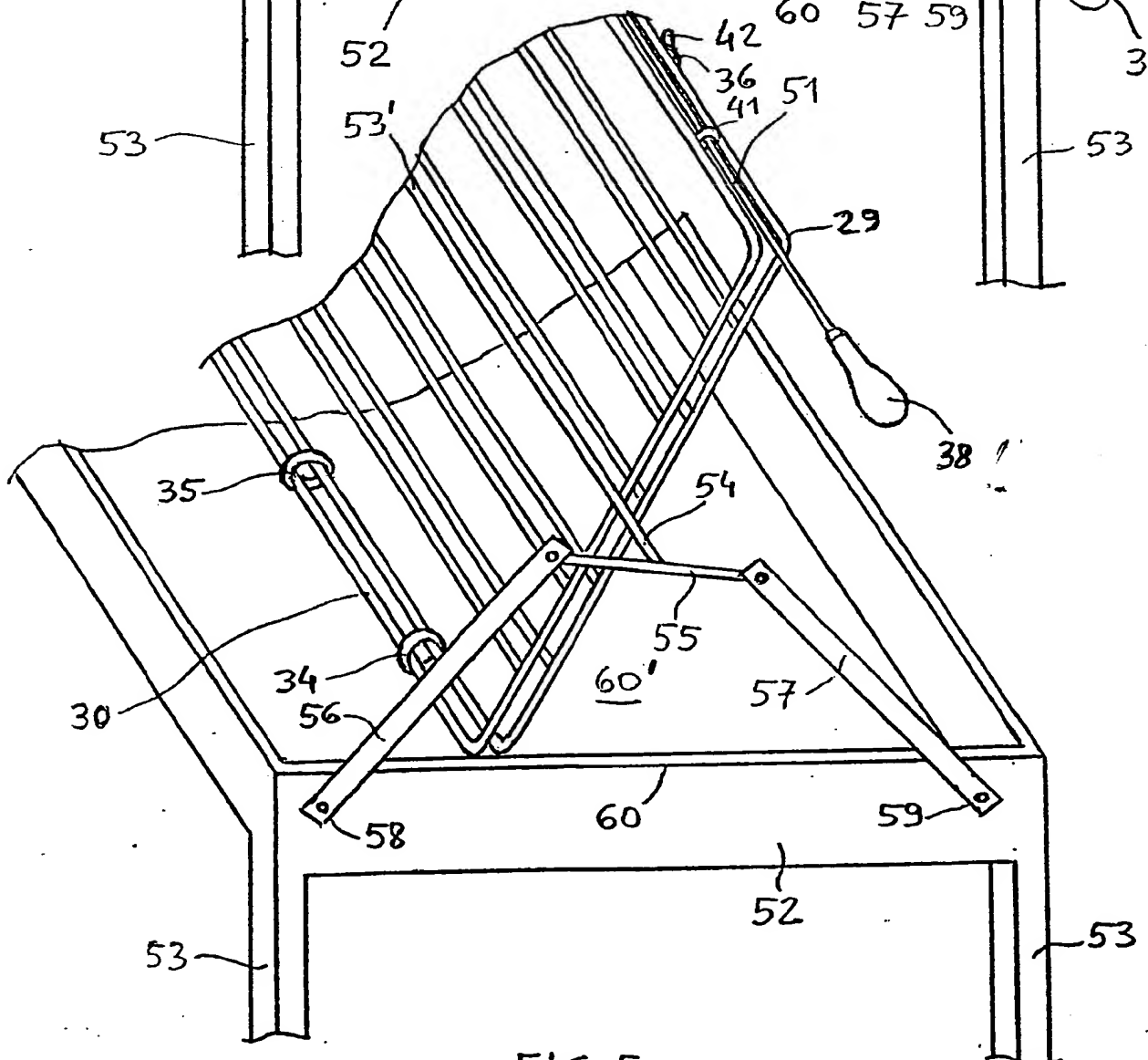
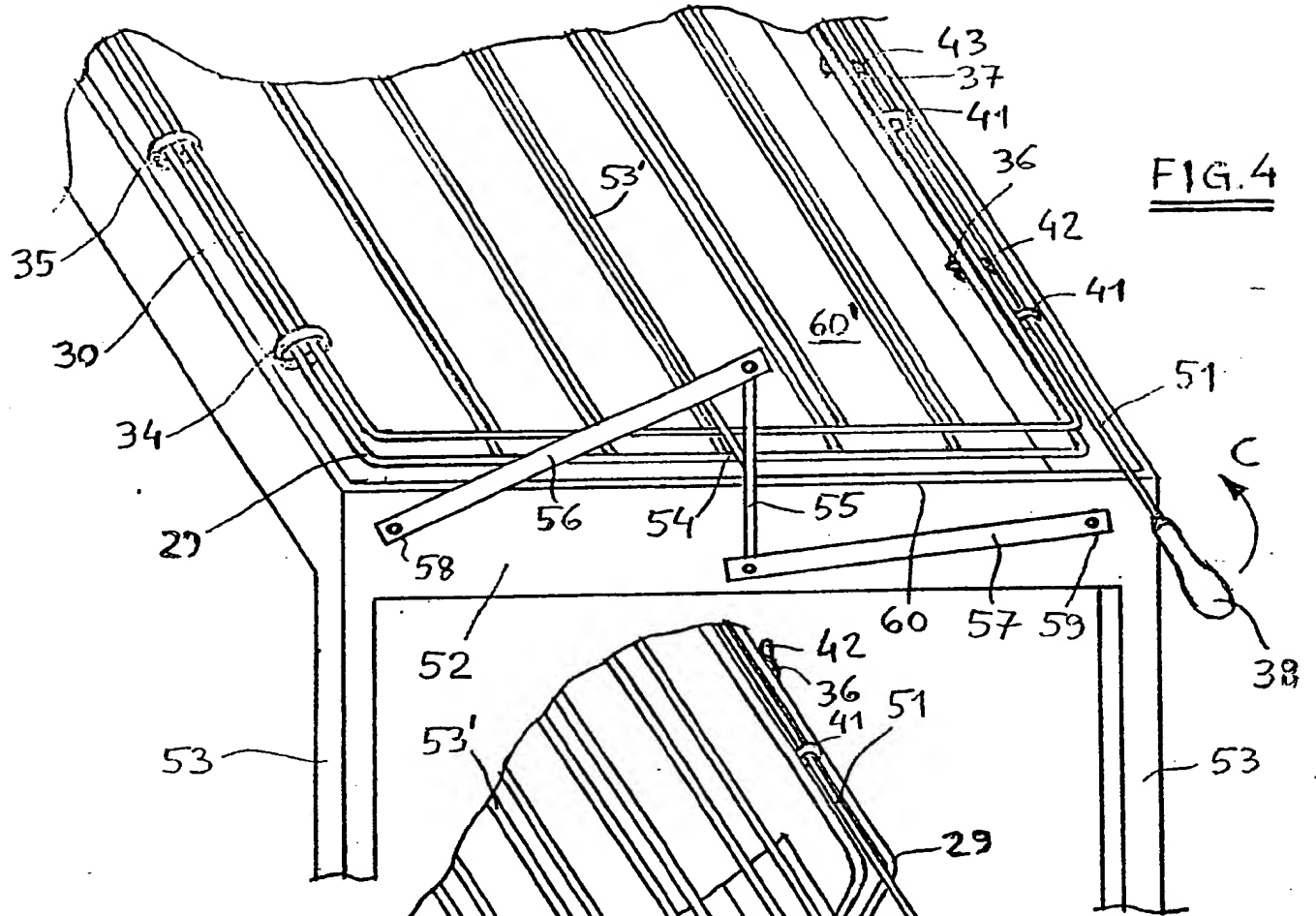


FIG. 3





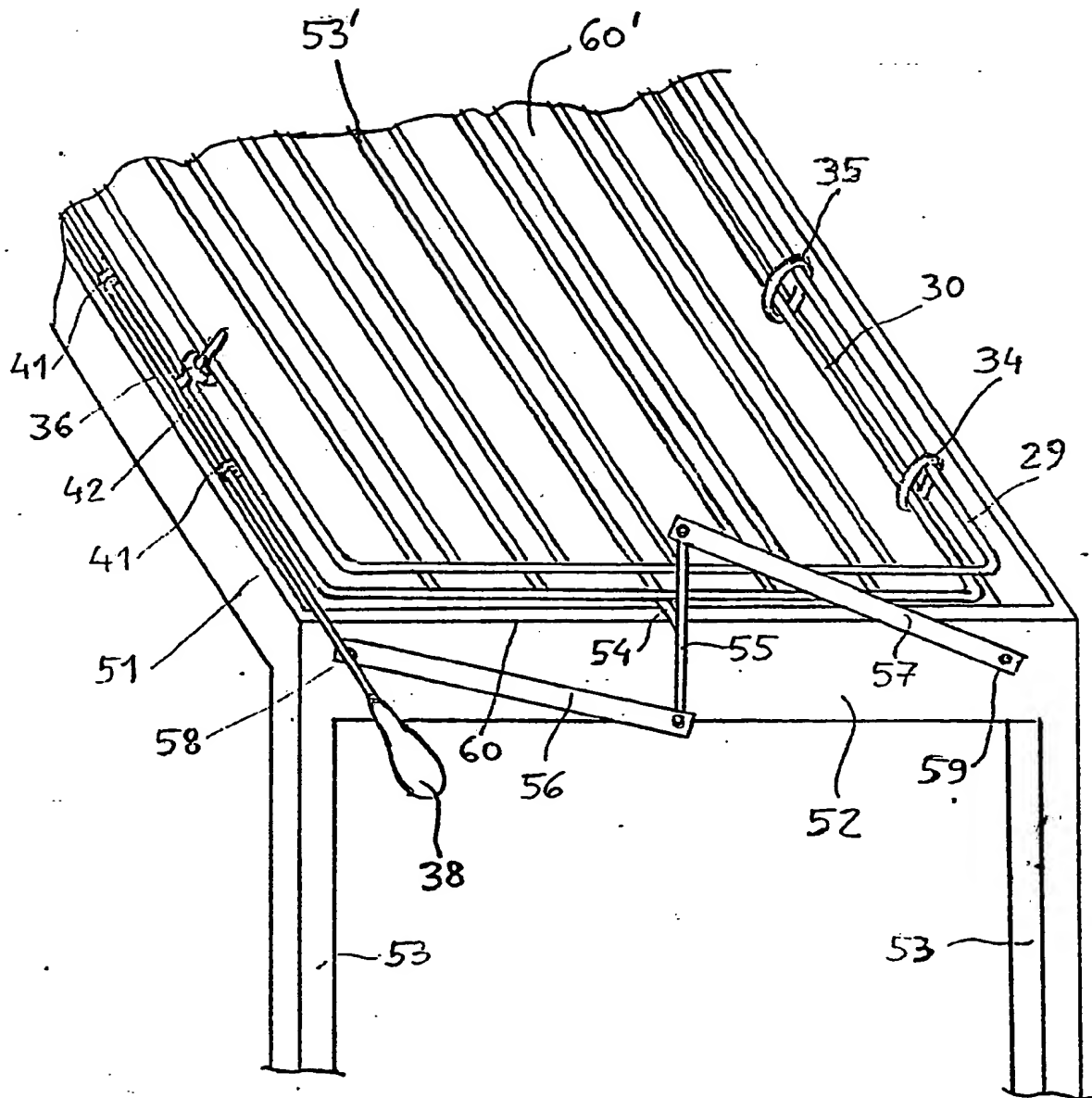


FIG. 6



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# EUROPEAN SEARCH REPORT

Application Number

EP 89 11 3922

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-4492152 (DESANTIS) * column 3, line 59 - column 6, line 34; figures 1, 2, 5, 10 *	1, 3, 4	A47J37/07 A47J37/06
A	---	5	
X	US-A-4479422 (WAGSTAFF) * column 4, lines 8 - 66; figures 1-6 *	1, 3, 4, 6	
A	---		
A	AU-B-444658 (SICH) * page 5, line 12 - page 7, line 12; figures 1-7 *	1, 3	
A	---		
A	US-A-3809053 (NAVARRO) * figure 1 *	2	
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			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A47J
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 09 NOVEMBER 1989	Examiner MEINDERS H.
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons & : member of the same patent family, corresponding document			